

BROOKHAVEN NATIONAL LABORATORY PHYSICS DEPARTMENT	Number: PO-EMS-02	Revision: 4.0
	Effective: 10/15/2004	Page 1 of 7
Subject: System Description DRAFT EMSDescription.doc		
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Introduction

This purpose of this document is to define how the Physics (PO) Department will execute and maintain an Environmental Management System (EMS). Specifically, this information is complementary to the [BNL EMS](#) and provides details as to how various EMS activities will be addressed in the Physics Department.

Scope

The Physics EMS applies to all activities performed in the Department's areas of responsibility, which includes the Physics Department (Buildings 510, 832, 820, 820B, and 820M), the operation and maintenance of the Accelerator Test Facility (ATF), the administrative functions of the Center for Accelerator Physics, and all employees, collaborators, contractors, students and visitors who conduct work in those Departments.

Policy

A BNL site-wide [environmental policy](#) has been established. The policy is discussed in "[Environmental Protection Training](#)" which all employees and visitors are required to complete. The Physics Department adheres to this environmental policy. The policy is on the BNL website and is posted in Building 510 in the Lobby, and in the HENP Associate Laboratory Director's office, room 1-36.

Aspects Determination

Environmental aspects ([SBMS Identification of Significant Aspects and Impacts Subject Area](#)) are identified through experimental safety review, work planning and control for operations, reviews of industrial processes identified during the EPA Process Evaluation Project ([Process Assessment Subject Area](#)) and the [Facility Review Project](#). Of these mechanisms, the most common is the Department's [Experiment Safety Review](#) (ESR) procedure. Each new or updated (at least annually) ESR is reviewed by the ES&H Committee, in which the Department EMS Representative (DER) and Environmental Compliance Representative (ECR) are members. The DER maintains a database of ESRs linked to the Department's Environmental Aspects Table. This table is updated during the review process by the DER. If a new significant aspect or a process that is not captured in the Environmental Management Plan (EMP) is identified, the appropriate modifications to the management plan are made, in consultation with the ECR. Thus, the Environmental Aspects Table reflects the current aspects in the Department and provides a direct linkage from aspects to the processes that give rise to that aspect. The concurrence of the ES&H Committee and approval by the Department Chair is obtained as part of the review process.

Number: PO-EMS-02	Revision: 4.0	Effective: 10/15/2004	Page 2 of 7

Links to Other Supporting Documents:

- [Physics Department EMS Web Site](#)
- [Environmental Aspects Table](#) (use Internet Explorer only)
- [Aspects Determination Flow Chart](#)

Legal and Other Requirements

All legal and other requirements flow down through SBMS Subject Areas. The ECR and PO EMS Representative are notified of changes in environmental subject areas via the SBMS change notification service. The ECR works with the PO EMS Rep to determine how the change affects the Directorate, what needs to be implemented, and how the affected individuals are notified. If it requires a significant change in procedure the ES&H Committee, and Chairman will be involved in the process. Minor changes are communicated to affected workers through emails, memos, or meetings. The Environmental Services Division maintains permits; the PO Contact is the ECR. Permits associated with individual buildings are listed in the Facility Use Agreements.

Objectives and Targets

Institutionally, BNL has Critical Outcomes and Performance Measures, which clearly identify environmental goals, objectives and performance measures. When considering objectives and targets the views of interested parties are considered. Objectives and targets are established for types of activities that have significant aspects associated with them. The Department goals and objectives are reviewed, revised, and approved at least annually via a management review and the annual self-assessment.

Environmental Management Program

The main objectives for the Physics Department are to maintain compliance with environmental subject areas and to evaluate the waste minimization and pollution prevention opportunities that were identified in the [EPA Phase II Process Evaluation Project](#). Self-assessment, Tier I inspection programs, and annual compliance audits are performance indicators for compliance. Pollution prevention and waste minimization opportunities are identified during annual experimental safety review and environmental review of industrial processes, through routine work planning activities, Tier I inspections and communications with staff. The Environmental Compliance Representative maintains a tracking system for environmental corrective actions and improvement opportunities that are identified during experimental review and process evaluations. The DER, Pollution Prevention Rep, and ECR work together to prioritize improvement opportunities. The recommendations are submitted to Line Management for concurrence.

The Environmental Management Program will be reviewed as needed via a management review as described in the [Physics Department ES&H Audit Policy](#). Management will concur with any mid-year changes. [Environmental Management Planning Forms](#) (EMPs) are completed for each activity that has a significant aspect associated with it. The DER will track progress and completion on all performance measures and tasks identified in EMPs via quarterly meetings with, at minimum, the ECR and others as required (based

Number: PO-EMS-02	Revision: 4.0	Effective: 10/15/2004	Page 3 of 7

on responsibilities). Changes may be required if a new aspect is identified or if circumstances change.

Organization and Structure/Roles and Responsibilities

The Physics EMS Team consists of: the Department EMS Representative, the Department ES&H Coordinator, and the ECR. The Physics Building Manager and the ES&H Committee Chairman are used as additional resources when needed.

Environmental responsibilities are included in each employee's R2A2. The DER is responsible for formulating the objectives and targets with Line Management and ensuring their concurrence and for reporting the performance of the EMS to Line Management.

Line Management is ultimately responsible for the identification and reporting of environmental hazards. This is done by reporting new experiments, or modifications to existing experimental activities, to the Experimental Safety Review or Work Control Coordinator as required in the [Work Planning and Control for Experiment and Operations](#) SBMS Subject Area and in accordance with [PO policy](#).

Training, Awareness and Competence

The [Training and Qualification Management System Description](#) defines BNL's training policy. A [Physics Department Training Policy](#) defines the Department's Training policies. Basically, training is identified through experimental safety review, routine work planning and location assessments by using the [Training & Qualifications Subject Area](#). Required BNL training is tracked through the Lab-wide training database. Job specific training for employees/collaborators performing work with potential for impact is accomplished by BNL required training, read-and-sign, emails, newsletters, postings, and/or briefings. The PO Training Coordinator tracks required BNL and Department specific training. Supervisors must ensure that their employees/collaborators training is complete before they can work on any given task where the activity can cause a significant environmental aspect.

Communication

Communication is covered in the following subject areas:

- [Correspondence and Commitment Tracking Subject Area](#).
- [External Communications Management System Description](#)
- [Internal Communication Management System Description](#)

The Physics Department's ES&H Coordinator is the contact person for the CCTS system. Communication internal to the Department is accomplished through the following: weekly administration meetings, Department website, emails, Experimental Safety Review meetings, ES&H Committee meetings, Group Leader meetings, Group Safety Coordinator meetings, routine inspections (Tier Is), all-hands meetings, and memos.

EMS Documentation

This document and all documents incorporated by reference into this document satisfy the EMS documentation requirements.

Number: PO-EMS-02	Revision: 4.0	Effective: 10/15/2004	Page 4 of 7
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Document Control

[Internal Controlled Documents Subject Area](#) is used. Certain Department-level documents are posted on a web site (e.g., Audit Policy, Training Policy, EMS System Description). If the document header does not indicate that the web version is the official version, then the official version resides elsewhere. In this case, the web version is provided for informational purposes only. See Attachment 1. The DER is responsible for the maintenance and approval of EMS documents and to notify the appropriate staff upon modification. They are reviewed as needed, and at minimum annually and after an occurrence or audit finding. The DER approves them with concurrence by appropriate Line Management and Support staff. Documents internal to a group are controlled by that particular group. See Attachment 1.

Operational Control

Each facility has in place a [Facility Use Agreement](#), which defines the operating envelope of the building. Activities that have associated significant aspects are included in the Department's EMP that defines the operational controls in place. Suppliers/Contractors abide by the EMS as it applies to the work they are doing in the facilities as required in their contract (see [BNL Procurement Operations Manual, Section III-A](#)). However, the Physics Department is seldom directly involved in contractual agreements: these are initiated by the work provider (typically Plant Engineering) and the Contracts and Procurement Division. The work is screened via the Work Planning and Control for Experiments and Operations Subject Area, and/or industrial process evaluations.

Emergency Preparedness and Response

In support of BNL's Emergency Plan, the Physics Department has developed local emergency plans for each of its buildings. These plans are reviewed as needed and revised if necessary, following the [Emergency Preparedness Subject Area](#). They are also reviewed and revised, if necessary, based on the results of an occurrence. The [Critiques Subject Area](#) provides guidance for conducting critiques of emergency preparedness exercises as well as for conducting critiques of events involving industrial safety or hygiene, conduct of operations, and/or areas of general programmatic breakdown. The Department has Local Emergency Plans for Buildings [510, 832, 820, 820B, and 820M](#). One [hazardous waste 90-Day area](#) is established in Building 510 where the contingency plan is posted. The current satellite accumulation areas are identified in the Department's web pages.

Monitoring and Measurement

The [Physics Department ES& H Audit Policy](#) describes the monitoring and measuring activities for the Environmental Management System and for environmental compliance, which is accomplished via Tier I inspections, and annual experimental safety reviews. The Environmental Management Planning Forms describe specific monitoring and measurement activities for performance on those activities that have significant aspects in support of BNL's Critical Outcomes and Performance Measures.

Number: PO-EMS-02	Revision: 4.0	Effective: 10/15/2004	Page 5 of 7

As documented in the EMP form, PO relies on BNL support divisions for environmental, safety, and health regulatory support and environmental monitoring. PO has an ECR to assist in management of the communication process. PO has a Facility Support Representative and Technician for radiological, health physics and industrial hygiene support. The appropriate support division maintains monitoring and calibration equipment records for environmental monitoring. The Subject Areas for [Environmental Monitoring](#) and [Calibration](#) defines required environmental monitoring. The Environmental Management Plan Form lists required monitoring activities.

Non-Conformance and Corrective/Preventative Action

The Department follows the [SBMS Nonconformance and Corrective/Preventative Action Subject Area](#) and has established a procedure for the investigation of occurrences that do not rise to the level of a lab-wide non-conformance but deserve attention. All employees report non-conformances or improvement opportunities to any member of the [Department ES&H Committee](#). A graded-approach is used to track and close the report using the guidance set forth in the [Graded Approach for Quality Requirements Subject Area](#). Major and internal non-conformances are forwarded to the ES&H Coordinator to be evaluated and tracked to closure using existing systems such as the BNL ATS.

Records Management

Environmental records are defined, inventoried, and maintained and retained for as long as required as defined in the [Records Management Subject Area](#). The DER is responsible for the following records: Aspects List, Significant Aspects List, and Environmental Management Plan Form. The Training Coordinator is responsible for the Department-specific environmental briefing forms. The ES&H Coordinator or designee is responsible for the Tier I Inspection data.

Environmental Assessments

The [PO Audit Policy](#) includes the substantive requirements of the [Environmental Assessments Subjects Area](#). The Physics Department Self-Assessment Manager is responsible for tracking completion on self-assessment activities and reporting status to Line Management.

- Compliance (Tier I) Audits for facilities that have a potential to impact the environment are conducted quarterly via the [Department ES&H Inspections \(Tier I\) program](#). Annual audits are conducted for those facilities that have no potential environmental impacts. The Tier I coordinator is responsible for these audits (coordinating, documenting, following up on issues).
- A total EMS system assessment will be conducted as scheduled in the Physics Department [Audit Policy](#) and as defined in the [Environmental Assessments Subjects Area](#). The DER is responsible for coordinating the assessment, reporting of results (to management via the management review) and follow-up. The system audit will include, at minimum, the DER, the ECR, and a qualified EMS lead auditor. The frequency of these audits varies based on the importance of the activity and past performance.
- Management reviews will be conducted by a team to include, at minimum, the Physics Department Chairman, the ECR, and the DER. It will be coordinated and

Number: PO-EMS-02	Revision: 4.0	Effective: 10/15/2004	Page 6 of 7

documented by the DER. The agenda is defined in the Subject Area on [Environmental Assessments](#).

Number: PO-EMS-02	Revision: 4.0	Effective: 10/15/2004	Page 7 of 7

Attachment 1
Physics Department EMS Document Control Matrix

Document(s)	Location	Prepare/Review/ Revise	Approval	Responsible Person	Revision Schedule
Environmental Management System Manual (this document) PO-EMS-02	Web / EMS Rep.	EMS Rep., EMS Team, ECR	EMS Rep.	EMS Rep.	Reviewed, revised as needed, at minimum annually and after an environmental or applicable occurrence or audit finding.
Environmental Management Plan PO-EMS-04	Web / EMS Rep.	EMS Rep., EMS Team, ECR	EMS Rep.	EMS Rep.	Reviewed, revised as needed, at minimum annually and after an environmental or applicable occurrence or audit finding.
Local Emergency Plans PO-LEP-01, -02, -03	Web / LE Coordinator	LE Coordinator, ESH Committee	Dept. Chair	LE Coordinator	Reviewed, revised as needed, and after an environmental or applicable occurrence or audit finding.
Contingency Plan PO-HW-01	90 Day Area	90 Day Manager, ESH Coordinator	90 Day Manager	90 Day Manager	Reviewed, revised as needed.
Facility Use Agreements	SBMS	Bldg. Manager	Line Mgmt.	FO FUA Steward	Reviewed, revised when processes change.
Work Planning and Control	Work Planning Coordinator	Work Planning Coordinator	Work Planning Coordinator	Work Planning Coordinator	Reviewed, revised as needed.
Nonconformance Procedure	Web	ESH Coordinator, ESH Committee	Dept. Chair	ESH Coordinator	Reviewed, revised as needed.
Significant Environmental Aspects List PO-EMS-05	EMS Rep.	EMS Rep., ECR	EMS Rep.	EMS Rep.	Reviewed, revised as needed, at minimum annually.